

MARGINAL WING-BRISTLES IN LEPIDOPTERA.

BY PROF. C. H. FERNALD.

IN the February number of this Journal (*ante*, p. 47), Mr. Ambrose Quail gives an illustrated article on the above subject, and states that he has read a great deal that has been written in reference to wing-structure in the Lepidoptera, but finds no reference to the presence of erect marginal bristles at regular intervals on the wings of certain Lepidoptera.

I have figured and described these bristles in two different works—'The Crambidæ of North America,' p. 10, plate A, fig. 11 (1896); 'The Gypsy Moth,' p. 341, plate 52, figs. 8 and 9 (1896). I have observed these spines in the wings of many of the Lepidoptera, and have never examined the wings of any Lepidopterous insect without finding them. I should therefore be surprised if they are not found in all the species of this order.

They are not always curved as shown in Mr. Quail's illustration; but, while some are curved, others on the same wing are straight, as those figured in the Gypsy Moth, mentioned above, which under high powers of the microscope appeared to be hollow, with a minute opening at the outer end. While I do not feel like expressing a positive opinion as to their function, I had supposed that they might be connected with scent glands beneath, or that they might be sense organs of some kind, and that the two circles near the end of each vein, which are more easily seen than these spines, are also sense organs.

I have less doubt about the function of the spiny area near the base of the under side of the hind margin of the fore wings of many (not all) Lepidoptera, and also in a few species in other orders. A good account of this area and its function may be found in 'Psyche,' vol. vii. p. 395, pl. 9 (1896).

Amherst, Mass., U.S.A.

DESCRIPTIONS OF FOUR NEW SPECIES OF *DISONYCHA*.
(COLEOPTERA PHYTOPHAGA, FAM. HALTICIDÆ.)

BY MARTIN JACOBY, F.E.S.

DISONYCHA FLORIDANA, sp. n.

Head fulvous; antennæ (the basal joint excepted), the tibiæ, tarsi, and the breast black; thorax impunctate, pale fulvous, margined with flavous; elytra punctured near the suture with five more or less distinct longitudinal costæ, pale fulvous, with a subsutural and a submarginal narrow flavous stripe joined at the apex. Length $5\frac{1}{2}$ millim.

Head impunctate, fulvous, the anterior portion paler, the frontal elevations flat and but feebly raised, clypeus broad, labrum and palpi

black; antennæ scarcely extending to the middle of the elytra, black, the basal two joints (sometimes) flavous; the fourth and fifth joints equal, longer than the third; thorax more than twice as broad as long, the sides feebly rounded, with a narrow margin, the anterior angles obtusely rounded, the posterior ones oblique, the disc with an obsolete transverse sulcus near the base, impunctate, pale fulvous, all the margins narrowly flavous; elytra with a few fine punctures near the suture, the rest of the surface impunctate, with five more or less distinct longitudinal costæ, the first and the fourth pale flavous, the lateral margins and the elytral epipleuræ of the latter colour; the breast and the basal segments of the abdomen black, the others flavous; the femora fulvous; the tibiæ and tarsi black.

Hab.—East Florida, St. John's Bluff.

This species, of which two exactly similar specimens are contained in my collection, does not seem to have been known to Dr. Horn, who published a "Monograph of the North American Halticidæ" (Trans. Am. Ent. Soc. xvi. 1889). *D. pennsylvanica*, Illig., seems the most nearly allied species, but differs totally in the coloration of the head, the elytra and under side, and in the want of the elytral costæ. *D. costipennis*, Jacq. Duval, from Cuba, seems to agree in the costate elytra with the present insect, but the author says nothing of the pale thoracic margins nor elytral bands, nor does Suffrian, who had seven specimens of the last-named species before him, mention this character, although he gives a detailed description of the Cuban insect. I must therefore consider this well-marked American form as new.

DISONYCHA ARGENTINENSIS, sp. n.

Flavous; head and antennæ black; thorax flavous, closely and strongly punctured; elytra nearly impunctate, black, a subsutural and sublateral posteriorly united band flavous; the breast, the knees, the apex of the posterior femora, and the tarsi black. Length 5 millim.

Head deeply rugose-punctate, black with æneous gloss; antennæ short and stout, black, the basal two joints more or less stained with flavous; thorax twice as broad as long, the lateral margins feebly rounded, the anterior angles slightly produced outwards but not pointed, posterior margin oblique at the angles, the surface closely and strongly punctured, flavous, the punctuation partly confluent at the sides; scutellum broad, impunctate, blackish æneous; elytra extremely finely punctured near the base and suture, the rest of the surface nearly impunctate, black, with a narrow subsutural and submarginal flavous band joined at the apex, below flavous; the breast, the knees, the extreme apex of the tibiæ, as well as the tarsi, black; the posterior femora also with a black spot at the apex; the abdomen sparsely clothed with pale pubescence.

Hab.—Argentine R.

There are four specimens of this species before me which differ from any of its nearly similarly coloured allies by the rugose sculpture of the head and the close and strong punctuation of

the thorax; the flavous elytral bands are about half the width of the discoidal black vitta, in which respect the species somewhat resembles *D. glabrata*, Fab. In two of the specimens this black intermediate band is emarginate at its outer margin, but no other differences are to be found. If the flavous colour of the elytra is taken for that of the ground colour, the latter may be described as having a narrow sutural and lateral black margin and a discoidal broader black band not reaching to the apex.

DISONYCHA LABIATA, sp. n.

Broadly ovate, fulvous; the antennæ, the labrum, breast, the tibiæ, and tarsi black; thorax impunctate; elytra scarcely perceptibly punctured, pale fulvous, a narrow sutural and submarginal stripe, joined at the apex, and a broader discoidal one not extending to the latter, black. Length 7 millim.

Head impunctate, with the exception of a punctured impression near the eyes, fulvous; the extreme vertex sometimes black; frontal tubercles obsolete; clypeus triangularly thickened with a small fovea above its base; labrum black; antennæ rather slender, black, the joints, with the exception of the small second one, elongate, the third slightly shorter than the fourth joint, the basal one more or less fulvous; thorax distinctly narrowed anteriorly, scarcely twice as broad as long, the sides rounded, narrowly margined, the anterior angles slightly oblique, not produced, the surface entirely impunctate, rather convex; scutellum black; elytra very minutely, sometimes scarcely perceptibly punctured, convex, the suture of each elytron and a longitudinal stripe close to the margins very narrowly black, joined at the apex, the middle of the disc with a broader band, not quite extending to the apex; below fulvous, rather densely clothed with grey pubescence; the breast fuscous; the extreme apex of the femora and the tibiæ and tarsi black.

Hab.—Mexico.

Of this species I have lately received two exactly similar specimens without detailed locality which do not agree with any of those described by me in the 'Biologia Centr.-Amer.,' nor with those described previously. The insect seems to be intermediate between *D. carolina*, Fab., and *D. crenicollis*, Say. It differs from the first-named in the black labrum (always pale in the allied species), in the unspotted thorax, and in the black tibiæ; from *D. crenicollis*, with which the species has the black labrum in common, it differs in the width of the discoidal black band, which is distinctly narrower than the fulvous portion, not as wide or wider, as Dr. Horn gives as one of the distinguishing points; there is also an absence of the three black thoracic spots in the present species.

DISONYCHA VENEZUELÆ, sp. n.

Elongate and parallel, black; thorax closely and finely punctured, fulvous, with a transverse black band; elytra extremely closely punc-

tured, black, with a subsutural and submarginal fulvous slightly raised band, joined at the apex. Length 7 millim.

Head closely punctured, with a smooth narrow central line; frontal tubercles distinct; antennæ extending nearly to the middle of the elytra, black, the lower three joints more or less fulvous below, terminal joints shorter than the intermediate ones; thorax twice as broad as long, narrowed in front, the sides rather strongly rounded, narrowly margined, the anterior angles not produced. the surface reddish fulvous, with a broad transverse black band at the middle, not quite extending to the lateral margins, this band closely and finely punctured, the fulvous portion nearly impunctate; scutellum much broader than long, black, impunctate; elytra extremely closely and distinctly punctured, black, with two narrow dark fulvous bands, one near the suture and about as wide as the black sutural interstice, the other near the lateral margin, of the same width and joined at the apex to the subsutural band, both these bands are somewhat convex or semicostate; the elytral epipleuræ, the entire under side and legs black, finely clothed with grey pubescence; the flanks of the thorax and the prosternum fulvous.

Hab.—Venezuela.

The thoracic black and closely punctured band, the very close punctuation of the elytra and the semicostate fulvous bands will distinguish this species (of which three specimens are before me) from any of its congeners.

ON THE MORPHOLOGY AND CLASSIFICATION OF THE AUCHENORRHYNCHOUS HOMOPTERA.

BY DR. H. J. HANSEN.

(Continued from vol. xxxiii. p. 334.)

The Cercopidæ thus differ by the metasternum, by the form and articulation of the posterior coxæ (partly also by their size), by the quality of the articulation between the trochanters and femora, and by the presence of the femoral protuberance just mentioned—from the following and preceding families, and they form in many respects a transition between them and the extremely remarkable Fulgoridæ.

3. *Jassidæ*.—The metasternum is *strongly chitinised*, and forms merely a narrow transverse belt, except at the middle line, where it sends a longitudinal narrow plate backwards between the posterior coxæ. These are *very large*, and their articulation extends right across to the lateral margin of the body, and nearly to the middle line. Their free distal part is proportionately moderately short, and directed downwards, backwards, and towards the middle plane, so that the interior angles of the two coxæ approach together in the middle line; the trochantins are